

Thank you for participating in this field exploration at Petrified Forest National Park! We hope you learned not only how to conduct a scientific study but that you learned something new about *your* national park.

The mission statement of Petrified Forest National Park:

Petrified Forest National Park preserves, protects, and interprets a globally significant example of a Late Triassic ecosystem and a continuum of human use in a high desert/short grass prairie environment. It preserves wilderness values for recreation, solitude, natural quiet, long distance views, and night skies. It provides outstanding opportunities for scientific research and education.

The mission statement of the National Park Service:

The National Park Service preserves unimpaired the natural and cultural resources and values of the national park system for the enjoyment, education, and inspiration of this and future generations. The park service cooperates with partners to extend the benefits of natural and cultural resource conservation and outdoor recreation throughout this country and the world.

**ROCKIN'
THROUGH
THE AGES:
FROM FOSSILS
TO PETROGLYPHS**

MONITORING PETROGLYPHS

FIELD GUIDE

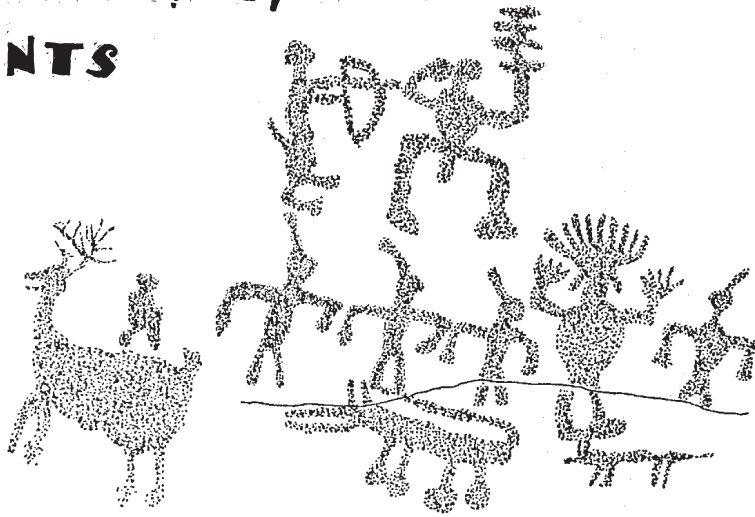
Date _____

Name _____

Petrified Forest National Park

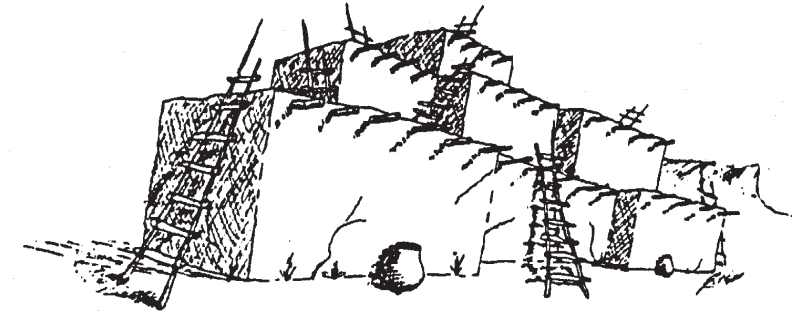


RULES, REGULATIONS, AND SAFETY POINTS



- All natural and cultural resources within national parks are protected by federal law. **Collection of park resources is illegal and subject to a \$275.00 minimum fine.** This includes petrified wood, archeological artifacts, rocks, plants, and animals. Even the smallest pieces count!
- Do not touch petroglyphs and pictographs. Oils from human skin can damage them.
- Do not draw, scratch, or paint on any rock surfaces.
- Do not move artifacts to another place. You can pick something up to look at it closer, but then put it back where you found it.
- Watch your step! Plants in this environment grow by the inch and are destroyed by the foot. Don't let it be your foot!
- Wear your yellow vest so other visitors know you are doing a scientific study.

SUMMARY



Archeology is a science that studies past human cultures through *artifacts* (objects made or used by people) within their *context*. Context means where and how artifacts are found and explained. The context can provide as much evidence about the life of past human cultures as the artifacts themselves. Help us protect this ancient evidence by not disturbing archeological sites during your visit.

The archeology of Petrified Forest National Park tells us how humans lived in this difficult environment. People have been coming here for thousands of years to collect petrified wood for tools, to hunt and gather wild foods and medicines, grow crops, and for ceremonial reasons. Most archeological sites are found on the grasslands and mesas of the lower Puerco River where soils were best for the native plants and wildlife, as well as for growing crops. These resources were important for the survival of the people.

Because the past can never be recreated, archeological resources are nonrenewable and in need of protection and preservation. While studying archeology, you are studying *people* who lived in a different time and place, as well as their *culture* (way of life). Why do we study the life of humans who lived in the past? One reason is that understanding how people lived before us gives us perspective, appreciation, and respect for the development and differences of modern cultures. Our knowledge of the past helps us realize how the present came to be and helps to guide our future.

ADDITIONAL FIELD NOTES

Use this space for any additional notes, poems, drawings, thoughts, or feelings you have about today.



FIELD EXPLORATION GOALS

During this field exploration you will:

- learn about the science of archeology, specifically petroglyphs;
- develop scientific research skills;
- develop mapping and measuring skills; and
- learn about the National Park Service and how archeological sites are protected.

MATERIALS NEEDED

- field guide
- pencil
- compass
- metric measuring tape
- graph paper
- gloves
- clipboard
- petroglyph panel photographs
- yellow vest



INTRODUCTION

In this field exploration you will be conducting a scientific study of petroglyphs at Petrified Forest National Park. You will draw and map petroglyph panels in the Puerco Pueblo area. Using historic photographs, you will look for changes to the petroglyphs, either natural or human-caused, and offer suggestions on how to prevent further damage.

Petroglyphs are the prehistoric carvings, etchings, or peckings of human, animal, or geometric symbols on rock for cultural purposes. They are made by either hitting the rock with a hammerstone alone or with a chisel and hammerstone together. *Pictographs* are like petroglyphs but are painted on rather than carved into rock surfaces.

Archeologists believe that where petroglyphs and pictographs are found is as important as the symbols themselves. They are usually found in important areas, such as homes, along trade routes, in sacred areas, near water, and at geographical landmarks.

Petroglyphs and pictographs are difficult to understand because no translation exists. The people who made them did not leave us a dictionary! Modern American Indians can explain some of the symbols, but their meanings are based on their culture today. Cultures change over time. Do old photographs in your grandparent's album hold the same meaning for you today?

Discuss the petroglyph examples on the next page with your group. See page 6 for an explanation of the labels used.



REFLECTIONS

What is the most important thing you learned today?

Why do you think petroglyphs are here?

Why do you think petroglyphs in the park should be protected?

What makes it hard for the National Park Service to protect this and other archeological sites?



IN YOUR OPINION

You can help the National Park Service to protect petroglyphs and other archeological sites by thinking of ways to prevent damage. List your ideas below.

We cannot look up the meaning of petroglyphs in an ancient dictionary. However, they are often found in areas important to the survival of the people who made them. Choose one or more of the petroglyphs you studied, draw it below, and describe what you think it means.

PETROGLYPH EXAMPLES



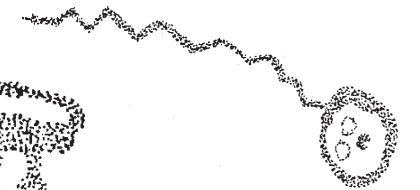
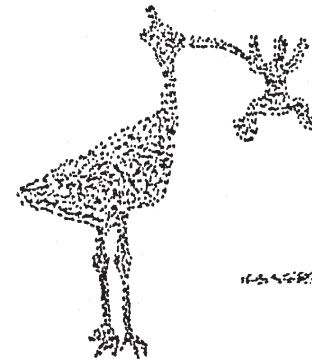
kachinas



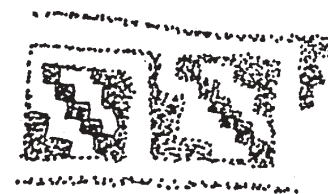
hands and tracks



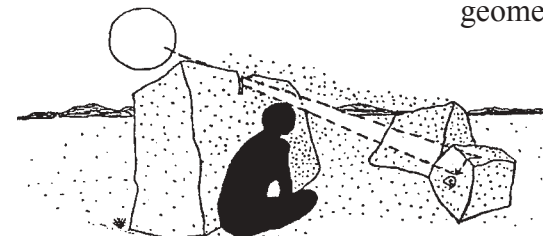
anthropomorphs



zoomorphs



geometrics



solar markers

DEFINITIONS

anthropomorph - carving or painting on rock which looks like a person

artifact - any object made or used by people

context - where and how artifacts are found and explained; the context provides evidence as important as the artifacts themselves

geometric - carving or painting on rock of geometrical shapes and patterns, such as squares, triangles, and spirals

graffiti - crude drawings or writing scratched or painted on a surface to deface the surface, usually so as to be seen by the public; a form of vandalism or damage

kachina (in traditional Hopi - **katsina**) - anthropomorph with facial features, such as eyes and mouth; representing ancestral spirits of the Hopi people

petroglyph - carving or pecking of symbols on rock for cultural purposes

pictograph - drawing or painting of symbols on rock for cultural purposes

solar marker - petroglyph or pictograph that interacts with the sun and a rock or geographical feature at a specific time of year, for example the longest day of the year: the summer solstice

survey - technique in which an area is systematically searched for artifacts

zoomorph - carving or painting on rock which looks like an animal

vandalism - the destruction of cultural resources, including pothunting, artifact theft, and graffiti

Does it look like someone has tried to damage or remove any of the petroglyphs?

Has the rock broken off naturally in any area of the panel?

Are there any changes around the rock panel, such as trails or rocks that have been moved?

CONCLUSIONS

What may be putting the petroglyphs in danger? Mark all that apply.

- ☐ People touching the symbols.
- ☐ People marking the rocks.
- ☐ People chipping off pieces of rock.
- ☐ Trails made by people.
- ☐ Soil washing away near rocks.
- ☐ Animals digging and burrowing near rocks.
- ☐ Rock falls or rock breaking naturally.

In your opinion, what is the degree of danger to the petroglyphs?

- ☐ Severe - *large amounts of disturbance or damage*
- ☐ Moderate - *some disturbance or damage*
- ☐ Low - *very little disturbance or damage*
- ☐ None - *no disturbance or damage*

In your opinion, what is the condition of the petroglyph panel?

- ☐ Destroyed - *petroglyphs are gone*
- ☐ Poor - *major disturbance by natural or human causes*
- ☐ Fair - *little disturbance or damage*
- ☐ Good - *no evidence of disturbance or damage*

Using the data above, do you think that any of the disturbance or damage at the petroglyph site could have been prevented?

FIELD REPORT

INTRODUCTION Why did you do this scientific study?

OBSERVATIONS Describe the area where you have been working.

METHODS How did you do this scientific study?

DATA Complete the table below and the information on the next page. The map you make is part of your data, so you will take it back to school with you.

PETROGLYPH SYMBOL	HOW MANY	GRAFFITI OR VANDALISM	HOW MANY
hands or tracks		scratches	
anthropomorphs		someone's initials	
kachinas		designs or pictures	
zoomorphs		other (please describe)	
geometrics			
other (please describe)			

FIELD EXPLORATION PROCEDURES



1. Meet a park ranger at Puerco Pueblo.
2. Listen to the park ranger’s introduction and review of your field guide.
3. Divide into your groups and collect the materials provided.
4. Follow the park ranger down to the petroglyph study site.
5. Answer the Observations questions on page 9.
6. Write the date and the names of everyone in your group on your graph paper.
7. Go to the petroglyph panel assigned by the park ranger for your group.
8. Using the compass **find where north is at your panel**. Mark north, south, east, and west on your graph paper. You will use these directions when you draw your map.
9. **Put on gloves** before you start measuring the petroglyphs. **DO NOT TOUCH THE PETROGLYPHS** with your bare hands!
10. **Measure the length and width of the petroglyph panel** using the tape measure. **Complete the table on the next page.**

Excavated Area Dimensions

LENGTH (METERS)	WIDTH (METERS)	AREA (SQUARE METERS = LENGTH x WIDTH)

11. To **draw the rock panel onto your graph paper, determine the *scale* first.** Count the squares across the graph paper. How many squares do you need to map the length and width of the panel? Write down the scale you used onto the map, for example 1 square = 20 centimeters.

12. **Begin your survey *systematically*:** start at one side and work your way across to the other side. Map all the petroglyphs, scratches, and other markings on the rock.

13. **Complete the Field Report on pages 10 and 11.** Ask the park ranger if you have any questions.

14. **Present your findings** to the rest of the class. Listen for changes that have occurred throughout the site, at more than one petroglyph panel.

15. **Complete the In Your Opinion questions on page 12.**

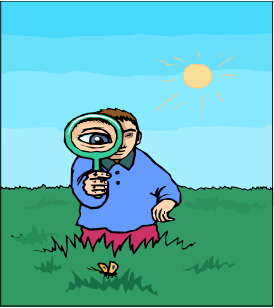
16. **Complete the Reflections questions on page 13.**

17. Use the results of this field study to develop a final project to be presented at school.

OBSERVATIONS

Scientists write field observations before beginning work. This records *variables* (things that can change) which might change the results of a study.

How do you feel today?



Describe the weather today. Is it hot, cold, windy, cloudy, sunny?

Look around you at the environment. What do you see? Rocks, sand, plants, animals or signs of animals like burrows or tracks?